

15. A semiconductor ridge laser apparatus, comprising:
- a first active ridge section having a first width formed at an output end of the laser and capable of supporting a fundamental lateral mode and one higher-order lateral mode;
- 5 a second active ridge section having a second width and capable of supporting the fundamental lateral mode and a first number of higher-order lateral modes; and
- a third active ridge section connecting the first and second active ridge sections and designed to facilitate mode conversion amplification of the
- 10 fundamental and one higher-order lateral mode in the first active ridge section; and
- wherein the fundamental lateral mode and the one higher-order lateral mode form an output beam having a profile that is less astigmatic than a purely fundamental lateral mode output beam profile.
- 15 16. The apparatus of claim 15, wherein the third active ridge section has a linear taper.
17. The apparatus of claim 25, wherein the one higher-order lateral mode is a second-order mode.
- 20 18. The apparatus of claim 15, further including:
- a fourth active ridge section capable of supporting the fundamental mode and a second number of higher-order lateral modes greater than the first number of higher-order lateral modes; and
- 25 a fifth active ridge section connecting the second and fourth active sections, the fifth active section designed to facilitate mode conversion amplification of energy in the second number of higher-order modes to energy in the fundamental mode and the first number of higher-order modes.
- 30 19. The apparatus of claim 18, wherein at least one of the third and fifth active ridge sections has a linear taper.